NOTES ON THE DIET OF THE NORTHERN MASKED OWL *TYTO NOVAEHOLLANDIAE KIMBERLI* IN NORTH QUEENSLAND. *Memoirs of the Queensland Museum 52(2): 148.* 2008:– *Tyto novaehollandiae kimberli* is listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) and *Nature Conservation Act 1992* (Queensland), and as near threatened by Garnett & Crowley (2000). The subspecies *T.n. kimberli* exists at low density throughout its northern Australian range and is reported to be in decline in parts of the Wet Tropics area (Young & De Lai, 1997; Nielsen, 2001).

Little has been published on the diet of *T.n. kimberli* (Higgins, 1999), although they are known to take rats in north Queensland (Hollands, 1991; Nielsen, 1993; Young & De Lai, 1997). Due to this paucity of information Garnett & Crowley (2000) recommended that the dietary composition and conservation status of principal prey be recorded where northern Masked Owls are located.

The diet of Masked Owl subspecies in southeastern Australia and Tasmania is better known and consists mainly of ground-dwelling rodents and small marsupials (Debus, 1993; Mooney, 1993; Peake et al., 1993; Debus & Rose, 1994; Kavanagh, 1996, 2002; Higgins, 1999; McNabb et al., 2003; Todd, 2006).

STUDY AREA AND METHODS. Five fresh pellets were collected from the foot of a tree below a known Masked Owl roosting/nesting hollow at Geraghty Park, Julatten (16° 34' S, 145° 21' E), north Queensland, in September 2006. A Masked Owl was observed leaving the hollow at dusk on 5 and 6 September. Three pellets were collected on 5 September, and while searches on 6 and 7 September failed to locate any more pellets, two further pellets were collected on 12 September. No other owl species were observed in Geraghty Park on 5-6 September (pers. obs.) or for the remainder of the month (K. & L. Fisher, pers comm. 2007). The hollow was located ~20m high in a large Forest Red Gum *Eucalyptus tereticornis* which, along with other nearby scattered trees, represent the last remnants of a eucalypt forest which once existed in the region. Masked Owls have used this hollow for approximately one year (K. & L. Fisher, pers comm. 2007). The surrounding area is a mosaic of mainly cleared pastures used for cattle grazing, sugar cane and rainforest remnants.

Pellets were analysed by ABR, and the minimum numbers of individual prey items determined, by counting skeletal parts and comparison with reference material (i.e. Knox, 1976; Watts & Aslin, 1981).

RESULTS AND DISCUSSION. The three pellets collected on 5 September measured 40 × 31, 40 × 25 and 39 × 34mm and contained, collectively, the remains of three Canefield Rats, *Rattus sordidus*. The two pellets collected on 12 September measured 35 × 28 and 36 × 27mm and contained, collectively, the remains of two Grassland Melomys, *Melomys burtoni*. The size of the pellets is considerably smaller than those recorded for the Tasmanian Masked Owl *T. n. castanops* (see Higgins, 1999).

Both the Canefield Rat and Grassland Melomys have been favoured by the establishment of sugar cane in north Queensland and are considered pests of that industry. Both rodents are among the most numerous small mammals in the Julatten-Mount Molloy district (Burnett, 2001).

The dietary sample from this study is broadly consistent with studies elsewhere in Australia, and particularly those in NSW, where the nominate Masked Owl subspecies *T. n. novaehollandiae* is opportunistic in prey selection, taking locally abundant mammals (Debus & Rose, 1994; Kavanagh, 2002; Todd, 2006).

The decline of the northern Masked Owl has been linked to the use of the now-banned rodenticide *Klerat* to control rats in sugar cane (Young & De Lai, 1997; Nielsen, 2001), although a general decline of mammals in northern Australia has also been suggested as a possible cause (Garnett & Crowley, 2000; Woinarski, 2004). Further quantitative studies on the diet of the northern Masked Owl would assist in identifying potentially threatening processes.

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Literature Cited

BURNETT, S. 2001. The Mammals of the Mount Molloy Stock Route Reserves and Spear Creek. Earthworks Report # 99e23 prepared for the Mitchell River Watershed Management Group. Available: www.mitchell-river.com.au/publications/mammals.pdf

DEBUS, S.J.S. 1993. The mainland Masked Owl *Tyto novaehollandiae*: a review. Australian Bird Watcher 15: 168-191.

DEBUS, S.J.S. & ROSE, A.B. 1994. The Masked Owl *Tyto novaehollandiae* in New South Wales. Australian Birds 28 (Suppl.): S40-S64.

GARNETT, S.T. & CROWLEY, G.M. 2000. The Action Plan for Australian Birds 2000. (Environment Australia: Canberra).

HIGGINS, P.J. (ed.) 1999. Handbook of Australian, New Zealand and Antarctic Birds. Vol. 4. Parrots to Dollarbird. (Oxford University Press: Melbourne).

HOLLANDS, D. 1991 Birds of the Night: Owls, Frogmouths and Nightjars of Australia. (Reed: Sydney).

KAVANAGH, R.P. 1996. The breeding biology and diet of the Masked Owl *Tyto novachollandiae* near Eden, New South Wales. Emu 96: 158-165.

2002. Comparative diets of the Powerful Owl (*Ninox strenua*), Sooty Owl (*Tyto tenebricosa*) and Masked Owl (*Tyto novachollandiae*) in southeastern Australia. Pp 175-191. In Newton, I. Kavanagh, R. Olsen, J. & Taylor, I. (eds) Ecology & Conservation of Owls. (CSIRO Publishing: Collingwood).

KNOX, E. 1976. Upper molar alveolar patterns of some Muridae in Queensland and Papua New Guinea. Memoirs of the Queensland Museum 17: 457-459.

MCNABB, E., MCNABB, J. & BARKER, K. 2003. Post-nesting home range, habitat use and diet of a female Masked Owl *Tyto novaehollandiae* in western Victoria. Corella 27: 109-117.

MOONEY, N. 1993. Diet of the Masked Owl in Tasmania: past and present. pp 160-174. In Olsen, P. (ed.) Australian Raptor Studies. (RAOU: Melbourne).

NEILSON, L. 1993. In the spotlight: nocturnal birding at Julatten, Qld. Bird Observer, 737: 9.

2001. Ornithological Audit of Public Reserves and Stock Routes in the Upper Mitchell River Catchment. Report prepared for the Mitchell River Watershed Management Group. Available: www.mitchelle-river.com.au/puhlications/birds.pdf

PEAKE, P., CONOLE, L.E., DEBUS, S.J.S., MCINTYRE, A. & BRAMWELL, M. 1993. The Masked Owl *Tyto novachollandiae* in Victoria. Australian Bird Watcher 15: 124-136.

TODD, M. 2006. Prey partitioning and behaviour of breeding Masked Owls *Tyto novaehollandiae* on the Central Coast of New South Wales. Australian Field Ornithology 23: 186-191.

WATTS, C.H.S. & ASLIN, H.J. 1981. The Rodents nf Australia. (Angus & Robertson: Sydney).

WOINARSKI, J.C.Z. 2004. National Multi-species Recovery plan for the Partridge Pigeon [eastern subspecies] *Geophaps smithii smithii*, Crested Shrike-tit [northern (suh)species] *Falcunculus (frontatus) whitei*, Masked Owl [north Australian mainland subspecies] *Tyto novachollandiae kimberli*; and Masked Owl [Tiwi Islands subspecies] *Tyto novachollandiae melvillensis*, 2004–2009. (Department of Infrastructure, Planning & Environment; Darwin).

YOUNG, J. & DE LAI, L. 1997. Population declines of predatory birds coincident with the introductinn of Klerat rodeuticide in north Queensland. Australian Bird Watcher 17: 160-167.

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